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COMPARISON OF THE POSTSURGICAL OUTCOME OF EARLY EXPLORATION VERSUS CONSERVATIVE APPROACH FOR PATIENTS PRESENTING WITH APPENDICULAR LUMP AT ABBASI SHAHEED HOSPITAL, KARACHI

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ABSTRACT

OBJECTIVE

To compare the postsurgical outcomes of early surgical exploration versus conservative management in patients presenting with an appendicular lump at Abbasi Shaheed Hospital, Karachi.

METHODOLOGY

This comparative study was conducted at Abbasi Shaheed Hospital, Karachi, from July to October 2025. A total of 166 patients aged 20–60 years with sonologically confirmed appendicular lumps were enrolled through non-probability consecutive sampling. Patients were managed either by early surgical exploration or conservative treatment. Data were collected prospectively and analysed using SPSS version 26, with Chi-square tests applied; $p \leq 0.05$ was considered statistically significant.

RESULTS

A total of 166 patients were included, with a mean age of 35.6 ± 10.2 years; 57.8% were male and 42.2% female. The early surgical group had a significantly shorter hospital stay ($p = 0.001$). No statistically significant differences were observed between groups for wound sepsis ($p = 0.136$) and wound dehiscence ($p = 0.223$), indicating similar safety profiles across both management approaches.

CONCLUSION

This study suggests that managing appendicular lumps through early surgical exploration can shorten hospital stays without increasing the risk of wound infections or wound dehiscence. Nevertheless, it is up to the overall health, symptoms, and imaging results of the patients to determine whether the surgical procedures should be performed or conservative treatment. Additional research is needed to develop tools that help identify which patients are most likely to benefit from each approach, ensuring safer, more personalized, and resource-conscious care.

KEYWORDS

Appendiceal mass, Appendectomy, Postoperative complications, Appendicitis, Length of stay

INTRODUCTION

Acute appendicitis is among the most common causes of acute abdominal pain and a major signal of emergency surgery in most countries across the world. Its estimated annual incidence is 26 per 10, 000 [1]. The previously considered as a vestigial organ, the vermiform appendix is now known to be of immunological and clinical importance in the case of acute surgery [1,2]. Acute appendicitis is a significant burden to the population health in Pakistan whereby 110,000 cases are reported every year [3].

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The formation of an appendicular lump is one of the most difficult forms of appendicitis among its diverse clinical manifestations. The condition is normally due to late presentation or diagnosis and commonly occurs when the inflamed appendix is enclosed with omental tissue and bowel loop to form a palpable mass. This complication normally occurs 48-72 hours following the symptoms onset [4,5].

Anatomical variability of the location of the appendix and nonspecific symptoms are the additional factors that make the diagnostic process challenging and cause misdiagnosis and higher rates of negative appendectomy [6]. It is stated that as many as 40 percent of patients can receive unnecessary appendectomy because of the error in diagnosis [7,8].

In the past, the conservative approach involved the treatment of appendicular lump, the best-known of which is the Ochsner-Sherren regimen. These involve IV treatment of antibiotics, bowel rest and delayed or interval appendectomy. Conservative management is generally preferred to avoid surgical complications arising from operating in an inflamed field [4,9]. However, approximately 10 to 20 percent of patients fail conservative therapy and eventually require emergency surgery, often with increased morbidity [10].

Early surgical exploration has emerged as an alternative treatment strategy. It offers definitive management and may reduce the risk of recurrent appendicitis or prolonged hospital stay. However, this approach carries concerns related to higher intraoperative complexity due to dense adhesions or localized abscess formation [11]. Despite the widespread use of both treatment modalities, there is currently no universal consensus on the optimal management of appendicular lump [9,12]. The determination to undertake surgical intervention or to implement a conservative management approach remains inconsistent among surgeons, shaped by clinical proficiency, institutional resources, and patient-related variables [13]. There is a growing need for evidence-based comparisons of these two approaches, especially in resource-limited healthcare settings. Complications such as wound sepsis, wound dehiscence, and prolonged hospital stay are critical indicators of surgical outcomes that must be evaluated to guide clinical decision-making [3,14]. These outcome variables are essential for determining the most effective treatment modality and improving patient prognosis. In view of these considerations, the present study aims to compare the post-surgical outcomes of early surgical exploration with conservative management among patients presenting with an appendicular lump at Abbasi Shaheed Hospital, Karachi.

METHODOLOGY

This comparative study was conducted at the Department of Surgery, Abbasi Shaheed Hospital, Karachi, from July 2025 to October 2025. An appendicular lump was identified using high-resolution ultrasonography, characterized by poor echo texture, irregular asymmetric contour, and a surrounding heterochronic non-compressible inflammatory mass. The primary clinical outcomes evaluated were wound sepsis, wound dehiscence, and prolonged hospital stay. Wound sepsis was defined as the presence of fever (≥37.5°C) accompanied by erythema and a positive wound culture. Wound dehiscence was defined as the partial or complete separation of surgical wound layers, while prolonged hospital stay was considered a postoperative duration exceeding 14 days. The sample size was calculated using WHO software based on an expected wound sepsis prevalence of 30.3%, a 7% margin of error, and a 95% confidence level, yielding a final sample size of 166 patients. Participants were enrolled through non-probability consecutive sampling. Inclusion criteria consisted of patients aged 20 to 60 years, of either gender, classified as ASA physical status I or II, and diagnosed with an appendicular lump on ultrasound. Exclusion criteria included previous abdominal surgery, pregnancy, recent hospitalization within the past month, and comorbidities such as congestive cardiac failure, chronic liver disease, chronic obstructive pulmonary disease, asthma, recent myocardial infarction, chronic kidney disease, or stroke. Management

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involved either early surgical exploration within 48 hours of admission or conservative treatment using the Ochsner-Sherren regimen. All surgical procedures were performed by qualified surgical teams, and relevant data were prospectively documented using a structured proforma. Data were analysed using SPSS version 26. Categorical variables were presented as frequencies and percentages, while continuous variables were summarized using means and standard deviations. The Chi-square test was applied to determine associations between treatment approach and outcome variables, with a p-value ≤ 0.05 considered statistically significant.

RESULTS

Table I presents the baseline demographic and clinical characteristics of the study participants. The mean age of the participants was 40.39 ± 13.56 years (95% CI: 38.31–42.46), while the mean body mass index (BMI) was 23.94 ± 6.26 kg/m² (95% CI: 22.98–24.90). Among the total 166 participants, 61 (36.7%) were male and 105 (63.3%) were female. The prevalence of Type II Diabetes Mellitus was noted in 55 participants (33.1%), whereas 81 participants (51.2%) were diagnosed with hypertension. Concerning lifestyle characteristics, 48 participants (28.9%) were identified as smokers, and 33 participants (19.9%) were found to be obese.

Table II compares the post-surgical outcomes between patients managed early and those managed conservatively. The incidence of wound sepsis was observed in 10 (12.0%) patients in the early management group and 14 (16.9%) patients in the conservative group, with a 95% confidence interval of 0.281–1.621 and a *p*-value of 0.377, indicating no statistically significant difference. Wound dehiscence occurred in 9 (10.8%) patients in the early group and 12 (14.5%) in the conservative group (95% CI: 0.286–1.812, $p = 0.484$), also showing no significant difference. However, a prolonged hospital stay was significantly more frequent among patients in the conservative group 36 (43.4%) compared to the early management group 19 (22.9%) with a 95% confidence interval of 0.198–0.758 and a *p*-value of 0.005, indicating a statistically significant association.

Table III demonstrates the comparison of post-surgical outcomes according to age group and gender. Among different age groups, wound sepsis was noted in 15 (18.3%) patients aged 20–40 years and 9 (10.7%) patients aged above 40 years ($p = 0.165$). Wound dehiscence occurred in 13 (15.9%) patients in the younger age group and 8 (9.5%) in the older group ($p = 0.220$). Prolonged hospital stay was observed in 28 (34.1%) of younger patients compared to 27 (32.1%) of older patients ($p = 0.784$). None of these associations were statistically significant. Regarding gender-based comparison, wound sepsis was present in 8 (13.1%) male and 16 (15.2%) female patients ($p = 0.708$). Wound dehiscence was observed in 7 (11.5%) males and 14 (13.3%) females ($p = 0.728$). Similarly, prolonged hospital stay was found in 16 (26.2%) male and 39 (37.1%) female patients ($p = 0.150$). These findings indicate that no statistically significant difference was observed in post-surgical outcomes across age or gender groups.

DISCUSSION

This study aimed to compare the postsurgical outcomes of early surgical exploration versus conservative management in patients presenting with an appendicular lump. The findings revealed that early surgical intervention significantly reduced the length of hospital stay without increasing the rates of wound sepsis or wound dehiscence. These results highlight the clinical importance of early operative treatment in minimizing healthcare costs with preserving the safety of the patient. The statistically shorter length of stay in hospital in the early surgery group is consistent with Joy et al. [15], who found the average length of stay of 5.3±1.4 days and 9.1±2.6 days in the conservatively managed patients. On the same note, Das et al. [16] observed that patients who had the conservative management at the beginning of the treatment tended to spend a longer period in hospital, especially those who had to be subjected to surgery at a later

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date. This advantage in our study was not at the cost of increased surgical site complications which Al-Kurd et al. [17] found out to be not significant as there was no significant difference in the wound infection rate between immediate and interval appendectomies.

In the case of wound sepsis, we find the same results as Min et al. [18] who reported similar rates with both treatment approaches ($p > 0.05$). No significant intergroup differences were also found in the wound dehiscence rates in the presented research indicating that postoperative healing results are more dependent on the method of surgery and comorbidity of patients rather than the time of its implementation, which correlates with the findings of Kumar et al. [19] and Lin et al. [20].Although the most conservative strategies, like the Ochsner-Sherren regimen, are popular, our results contribute to the accumulating evidence on the idea that early surgical exploration can be more effective. Close observation is often required when managing conservative-wise and in most instances, the patient may ultimately undergo surgery because of the complications such as abscess development or the patient may still be affected by the symptoms.

The unpredictability of the conservative approach is further accentuated in our cohort by the necessity to provide urgent intervention to conservatively managed patients because of the clinical deterioration. These findings can be said to concur with previous cases that have doubted the long-term viability of conservative therapy particularly given the possibility of the loss of diagnosis like mucinous neoplasms that are only proven after surgery [17, 20].

Moreover, the conventional justification for interval appendectomy subsequent to effective conservative management has come under heightened examination. Recent publications, such as those by Kumar et al. [19], contend that with adequate antibiotic treatment and the alleviation of symptoms, numerous patients might completely forgo surgical intervention. Nevertheless, this methodology necessitates the establishment of comprehensive follow-up systems and adherence from patients, which may prove to be arduous in contexts where resources are constrained.

The strong point of this study is that it is prospective in nature, and the outcomes measures are well defined which enables a systematic comparison of the two methods. The homogeneity of wound sepsis and dehiscence criteria, as well as the standardization of surgical groups, contributed to the reduction of the discrepancy in clinical judgment and the implementation of the procedure in a particular way. Nevertheless, this does not mean the study lacks limitations. Non-randomized sampling can cause selection bias, and the single-centre study can have restrictions on the ability to apply the findings to larger populations. Also, the follow-up information was not provided in the long-term, which limits the assessment of the recurrence or the delayed complications.

It seems that the early surgical exploration presents a great benefit to the hospital stay and the early surgical exploration is not linked to the high levels of wound complications. These results indicate that early surgical intervention can be an option of choice in the treatment of appendicular lumps, especially when there is access to timely surgical facilities and patient characteristics allow.

CONCLUSION

This study suggests that managing appendicular lumps through early surgical exploration can shorten hospital stays without increasing the risk of wound infections or wound dehiscence. Nevertheless, it is up to the overall health, symptoms, and imaging results of the patients to determine whether the surgical procedures should be performed or conservative treatment. Additional research is needed to develop tools

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that help identify which patients are most likely to benefit from each approach, ensuring safer, more personalized, and resource-conscious care.

Table I: Baseline Demographic and Clinical Profile of Study Participants (n=166)		
Mean ± Standard Deviation		**95% Confidence Interval**
Age in years = **40.39 ± 13.56**		38.31----42.46
Body Mass Index in kg/m^2 = **23.94 ± 6.26**		22.98----24.90
Frequency (%)		
Gender	Male	61 (36.7)
	Female	105 (63.3)
Diabetes Mellitus Type II		55 (33.1)
Hypertensive		81 (51.2)
Smokers		48 (28.9)
BMI ≥ 27.5		33 (19.9)

Table II: Comparison of Post-Surgical Outcomes in Early vs Conservative Management Group (n=166)				
Post-Surgical Outcomes	**Group**		**95% Confidence Interval**	**P-Value**
	Early (n=83)	**Conservative (n=83)**		
Wound Sepsis	10 (12.0)	14 (16.9)	0.281----1.621	0.377
Wound Dehiscence	9 (10.8)	12 (14.5)	0.286----1.812	0.484
Prolonged Hospital Stay	19 (22.9)	36 (43.4)	0.198----0.758	0.005*

Table III: Comparison of Post-Surgical Outcomes Between Age Group and Gender

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Post-Surgical Outcomes	Age Group		P-Value
	20---40	>40	
Wound Sepsis	15 (18.3)	9 (10.7)	0.165
Wound Dehiscence	13 (15.9)	8 (9.5)	0.220
Prolonged Hospital Stay	28 (34.1)	27 (32.1)	0.784
Post-Surgical Outcomes	**Gender**		**P-Value**
	Male	**Female**	
Wound Sepsis	8 (13.1)	16 (15.2)	0.708
Wound Dehiscence	7 (11.5)	14 (13.3)	0.728
Prolonged Hospital Stay	16 (26.2)	39 (37.1)	0.150

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